information from an originating processor A–N to a destination processor A–N using RF transmission by the RF information transmission network **302** only requires the identification of an address of the RF receiver, which preferably is the identification number of the receiver **119** in the RF information transmission network and the designation of an address of an interface switch in the form of an address such a "TF MOBOX" which connects the electronic mail system to the RF information transmission network as described below in conjunction with FIGS. **9** and **10**. The initiator of an electronic mail message, in the most user friendly form of the invention, is only required to input into the originating processor A–N an identification of the destination processor A–N which typically is in the form of a name such as "John Doe". The distributed intelligence of the system implementing the present invention, which may be located in any one of the originating processor A–N, gateway switch **14** or interface switch **304** or distributed therebetween as described below with reference to FIG. **11**, may be used to add the necessary address of the interface switch connecting the electronic mail system **1**–N to the RF information transmission network **302** and the identification of the RF receiver **119** in the RF information transmission network from the inputting of only an identification of the destination processor A–N. The addition of the identification number of the RF receiver **119** and the address of the interface switch may be implemented by the originating processor A–N of one of the computing systems **#1**–#N, a gateway switch **14** or an interface switch **304** as described below with reference to FIG. **9**.

FIG. **9** illustrates a block diagram of the connection between a plurality of gateway switches with mailboxes **14** in different electronic mail systems to the RF information transmission network **302**. It should be understood that multiple gateway switches with mailboxes **14** from a single electronic mail system **1**–N may be connected to each interface switch **304** instead of the connection of a single gateway switch with mailbox to a single interface switch as illustrated. A plurality of interface switches **304** connect information transmitted from at least one electronic mail system as illustrated in FIG. **8**, but optionally, a plurality of electronic mail systems **1**–N each as illustrated in FIG. **8** are connected to a data input port of the RF information transmission system as illustrated in FIG. **12** which is preferably hub switch **116** of the prior art paging network described above with reference to FIGS. **2**–**6**. The dotted line communication paths **306** illustrate optional information transmissions in which information from a plurality of different electronic mail systems is concentrated at a single interface switch **304**. The dotted line communication paths **307** illustrate connections to additional gateway switches with mailboxes **14** within electronic mail systems **1**–N.

The function of the interface switches **304** is twofold. In the first place, the interface switches **304** function as a security check to determine that information transmissions originating from a gateway switch with mailbox **14** represent transmissions which should be coupled to a hub switch **116** of the RF information transmission network **302**. The security check is performed by the interface switch **304** comparing the identification number of the RF receiver **119** which has been added by either an originating processor A–N or a gateway switch with mailboxes **14** with permissible identification numbers or the interface switch performing the addition of the identification number. The interface switch **304** also removes information added by the electronic mail system **1**–N to the information originated by the originating processor A–N from the stored information received from one of the gateway switches **14** and adds information used by the RF information transmission network **302** during transmission of the information originated at the originating processor to a RF receiver **119** in the RF information transmission network **302** which receives the information and transfers it to the destination processor A–N. Additionally, the interface switch **304** encodes data, which is required to format the display of the CRT of the destination processor for the electronic mail system to which the destination processor is connected, in the form of a character or characters which are decoded by either the RF receiver **119** or the destination processor A–N and added in decoded form back to the information which is processed by the destination processor with a format of the electronic mail system to which the destination processor A–N is connected.

The interface switches **304** function to store information which has been stored by at least one gateway switch **114** that is received from a plurality of originating processors, assemble the information from a plurality of originating processors into a packet preferably having the format of that described above with reference to the prior art in FIG. **6** and transmit the packet to the hub switch **116** within the RF information transmission network **302**. While the invention is not limited to the transmission of the packets from the interface switch **304** to the hub switch **116** of the RF information transmission system **302**, the hub switch is the preferable node in the RF information transmission network to which communications from the gateway switches **14** should be transmitted as a consequence of it having jurisdiction over both lata switches **114** and the local switches **112** in the RF information transmission network which results in lesser network overhead.

The hub switch **116** receives the packet from the receiving interface switch **304** and disassembles the packet into information from the plurality of originating processors either within a single electronic mail system such as system **1** or from a plurality of electronic mail systems, such as systems **1**–N, or from outside of any electronic mail system from at least one additional processor **312** which is connected directly to interface switch **304** to originate information to be transmitted to a destination processor A–N in an electronic mail system as described below. The RF information transmission network **302** transmits the disassembled information from the hub switch **116** including the identification number of the RF receiver **119** transfers information to the destination processor A–N to a local switch **112** storing the file **154** identified by the identification number and any destination **178** of the RF receiver in the RF information transmission network to which the information and identification number is to be transmitted by the RF information transmission network and adds any destination of the RF receiver to the information in accordance with the prior art system described above with reference to FIGS. **2**–**6**. The RF information transmission network in response to any added destination transmits the information and identification number to the destination in accordance with the prior art system described above with reference to FIGS. **2**–**6** for RF broadcast to the RF receiver **119** for transfers to the destination processor A–N.

The information is transmitted to a receiving interface switch **304** from one or more gateway switches **14** by one or more electronic mail systems **1**–N in response to an address of the receiving interface switch which has been added to the information originated by the originating processor by either the originating processor or gateway switch. The information is transmitted from the receiving interface switch **304** to the RF information transmission network with an address of

the destination processor, such as a name of a user of the destination processor A–N, to receive the information which has been added by either the originating processor A–N, a gateway switch **14** or the receiving interface switch **304**.

Various options exist for the adding of the address of the receiving interface switch and the address of the destination processor. Preferably, the address of the receiving interface switch is a code word, such as "TF-MOBOX", which is recognized throughout the electronic mail system when appended to information as directing the information to be transmitted to the interface switch **304**. The address of the destination processor is preferably the identification number of the RF receiver **119** within the RF information transmission network **302**. The address of the receiving interface switch may be added to the information originated by the originating processor, by a gateway switch **14** or by the originating processor A–N. The address of the receiving interface switch **304** may be added to the information by matching an identification of the destination processor A–N which may be the name of the individual utilizing the processor or some other information and adds an address of an interface switch such as the aforementioned "TF-MOBOX" stored with the matched identification of the destination processor to the information as the address of the receiving interface switch. Alternatively, the originating processor may be used to add the address of the receiving interface switch **14** by an inputting of the address of the receiving interface switch (TF-MOBOX) along with an identification of the destination processor A–N (name of recipient using the processor). The originating processor A–N may also add the address of the receiving interface switch **304** by matching an identification of the destination processor (name of the user of the processor) with a stored identification of a destination processor and adding an address of the interface switch (TF-MOBOX) stored with the matched identification of the destination processor to the information as the address of the receiving interface switch. The identification number may be added to the information originated by the originating processor or, alternatively, may be added by the originating processor by matching an identification of the destination processor (the name of the user of the processor) with a stored identification of a destination processor (the authorized user of the destination processor) and adding an identification number stored with the matched identification of the destination processor to the information as the identification number of the RF receiver **119**. Alternatively, the aforementioned matching process may be performed by either the gateway switch **14** or the interface switch **304**.

The at least one additional processor **312** originates information from outside of any electronic mail system. The processors **312** provide an address of at least one destination processor in an electronic mail system, such as the name of the user, to receive information transmitted by the RF information transmission system **302** or an identification number of the RF receiver **119** receiving information and transferring the information to the destination processor. The interface switch **304** which receives the information from each processor **312** adds information used by the RF information transmission network **302** during transmission of the information to the RF receiver **119** receiving the information in the same manner as described above with respect to the interface switch **304**.

The advantage of connecting the processors **312** directly to the interface switch **304** is that the processors **312** are only required to have a telephone modem and support programming to format information for RF transmission to a destination processor A–N within any one of one or more electronic mail systems 1–N. The processors **312** are not required to have the necessary electronic mail system software present in originating processors A–N or interconnections with an electronic mail system. As a result of the connection to the interface switch **304**, information originating from the additional processors **312** may be transmitted by RF transmission to a destination processor A–N within any one or a plurality of electronic mail systems with the user of the processor **312** or the processor **312** or the interface switch **304** only having to supply an identification number of the receiver **119** to input information into the RF information transmission system **302** for RF transmission to a destination processor.

The difference between originating information by one of the additional processors **312** outside of any electronic mail system and originating information by one of the processors within one of the electronic mail systems is that the direct connection of the additional processor to the interface switch **304** eliminates the requirement for the adding of an address of the interface switch **304** which is required by the electronic mail systems to forward the information to the interface switch where necessary formatting of the information to be compatible with the RF information transmission system is performed. The interface switch **304** packetizes information originating from the additional processors **312** in the same manner as described above with respect to information originating from within an electronic mail system. Information from within an electronic mail system and originating from additional processors **312** outside of the electronic mail system may be formatted into the same packets which are forwarded to the hub switch **116**. Additionally, an interface switch **304** may be connected only to the additional processors **312** to provide an interface only for processors outside of any electronic mail system to destination processors A–N within one or more electronic mail systems 1–N. The only information which is necessary to be inputted by the additional processors **312** is the address of the destination processor (user of the processor). The addition of the identification number of the receiver **119** may be added by matching of an identification of the destination processor with stored destination processors within the additional processor **312** or the interface switch **304** with an identification number of the receiver **119** stored with an identification of a destination processor A–N used as an identification of the destination processor upon a match having been made.

FIG. **11** summarizes electronic mail message entry methods for messages (information) originating from originating processors within an electronic mail system. The first entry method adds the address of the interface switch **304** and the destination processor preferably in the form of a user's name; the gateway switch **14** takes no action; and the interface switch **304** adds the identification number of the RF receiver **119**. The second entry method adds the address of the interface switch **304** and the identification number of the receiver **119**; the gateway switch **14** takes no action; and the interface switch **304** performs only the function of verifying that the identification number which was added by the originating processor is a valid identification number within the RF information transmission network **302**. In the third method, the originating processor adds the destination processor preferably in the form of the user's name; the gateway switch adds the destination of the interface switch **304**; and the interface switch **304** adds the identification of the receiver **119**. In the fourth method, the originating processor adds the destination processor preferably in the form of the user's name only; the gateway switch **14** adds an address of the interface switch **304** and the identification

number of the receiver **119**; and the interface switch takes no action other than verification that the identification number of the receiver **119** added by the gateway switch **14** is valid. In the fifth method, the operator of the originating processor adds the destination processor, points to an icon displayed on a CRT associated with the originating processor and the originating processor adds the address of the interface switch **304**; the gateway switch **14** adds the identification number of the receiver **119** and the interface switch **304** takes no action other than verification. In the sixth method, the operator of the originating processor adds the destination processor, the user of the originating processor points to an icon displayed by a CRT associated with the originating processor which causes the addition of the address of the interface switch **304**; the gateway switch takes no action and the interface switch **304** adds the identification of the receiver **119**. In the seventh method, the operator of the originating processor adds the destination processor, the user points to an icon displayed on a CRT associated with the originating processor causing the addition of the address of the interface switch **304** and the receiver identification number by comparing an identification of the destination processor, such as user name of the destination processor, to an identification of destination processors with identification numbers or RF receivers **119** which transfer information to the destination processor; the gateway switch **14** takes no action; and the interface switch **304** takes no action.

FIG. **12** illustrates a block diagram of an interface switch **304** in accordance with the present invention. The interface switch **304** has a main CPU **400** to which is connected a floppy drive **402** and a hard drive **404** for providing memory storage for use by the CPU in executing the various functions of the interface switch as described above. The program on pages 10–14 of the Appendix implements the function of the interface switch **304** in a 3B2 computer which interfaces with the Telefind Corporation data transmission network described in the above-referenced patents and the AT&T Corporation electronic mail system. A diagnostic and maintenance port **406** is connected to the CPU in accordance with standard practice. A main bus **408** is coupled to a plurality of serial ports **410** which are connected in series with a multispeed modem **412** which is connected to one of the additional processors **312** as discussed above with reference to FIG. **9**, to at least one gateway switch with mailboxes **14** in at least one electronic mail system and to a plurality of network ports which are connected to a plurality of X.25 modems **414** which are connected in series with a network port **416** which is connected to hub switch **116** of FIG. **9**. A module bay controller **418** controls the bus **408** in accordance with standard practice. Alternatively, if the interface switch is not connected to a gateway switch with mailboxes **14**, the interface switch functions only as a general purpose collector switch for the additional processors **312**.

While the invention has been described in terms of its preferred embodiments, it should be understood that numerous modifications may be made thereto without departing from the spirit and scope as defined in the appended claims. For example, while the invention has been described in terms of utilizing a preferred RF information transmission network, it should be understood that the invention is equally applicable to other forms of RF transmission systems for broadcasting information originating from an originating processor within an electronic mail system or from an additional processor outside of any electronic mail system to a destination processor connected to an electronic mail system. It is intended that all such modifications fall within the scope of the appended claims.

APPENDIX

An Appendix containing a listing of control programs for controlling the transmission of information between an RF receiver and a destination processor and controlling the operation of an interface switch in accordance with the invention is attached. The programs are written in the C programming language. The program for controlling the transmission of information from the RF receiver to the destination processor appears at pages 1–9 and the program for controlling the operation of the interface switch appears at pages 10–12. The Appendix contains subject matter which is copyrighted. A limited license is granted to anyone who requires a copy of the program disclosed therein for purposes of understanding or analyzing the invention, but no license is granted to make a copy for any other purposes including the loading of a processing device with code in any form or language.

```
#define ATT_EMAIL_FILE          "TFMOBOX.TMP"
#define DELIMITER               "End of Telefind Network Message\n"
```

```
#include <string.h>
#include <time.h>
#include <stdio.h>
#include <dos.h>
#include "safari.h"

void main(void)
{
        FILE *infile,*outfile;
        char buffer[81],chr,timestr[6],datestr[9];
        char msg_num[4];
        int msg_num_opt = 0;
        char *ptr;
        int x,day,month,line=1,attmail=0;
        time_t t;

        if ((infile = fopen(ATT_EMAIL_FILE,"rt")) == NULL)
        {
                printf("%s does not exist\n",ATT_EMAIL_FILE);
                exit(0);
        }
        if ((outfile = fopen("tfmobox.$$$","wt")) == NULL)
        {
                printf("Can't open TFMOBOX.$$$\n");
                exit(0);
        }

        for(;;)
        {
                /*      get characters from .tmp file   */
                x = 0;
                do
                {
                        chr = fgetc(infile);
                        if (feof(infile))
                        {
                                fclose(infile);
                                fclose(outfile);
                                exit(0);
                        }
                        buffer[x++] = chr;
                }
                /*          until end of line          */
                while (chr != '\n' && x != 80);

                buffer[x] = '\0';       /*     terminate it     */

                if (line == 1)
                {
                        ptr = strchr(buffer,')');
                        if (ptr-buffer == 2)    /*   was 3rd character  */
                        {
                                sscanf(buffer,"%[^)]",msg_num);
                                msg_num_opt = 1;
                                ptr++;
                        }
                        else
                                ptr = buffer;

                        if (*ptr == ':' && *(ptr+1) == 'D')
                                attmail = 1;
                }

                if (attmail)
                {
                        switch(line)
```

```
                {
                        case 1:
                                /*      datestr = mm/dd, timestr = hh:mm        */

                                sscanf(datestr,"%d/%d",&month,&day);            */
                                /*      get year from pc        */

                                t = time(NULL);
                                fprintf(outfile,"Date: %s",ctime(&t));
                                break;
                        case 2:
                                fprintf(outfile,"From: %s",buffer);
                                break;
                        case 3:
                                fprintf(outfile,"Subject: %s",buffer);
                                fprintf(outfile,"To: <Name here>\n");
                                if (msg_num_opt)
                                        fprintf(outfile,"Message #%s\n",msg_num);
                                break;
                        default:
                                fprintf(outfile,"%s",buffer);
                                break;
                }
        }
        else
        {
                if (line == 1)
                {
                        t = time(NULL);
                        fprintf(outfile,"Date: %s",ctime(&t));
                        fprintf(outfile,"From: tfmobox\n");
                        fprintf(outfile,"Subject: Telefind Network Message\n");
                        fprintf(outfile,"To: <Name here>\n");
                        if (msg_num_opt)
                        {
                                fprintf(outfile,"Message #%s\n",msg_num);
                                fprintf(outfile,"%s",buffer+3);
                        }
                        else
                                fprintf(outfile,"%s",buffer);
                }
                else
                        fprintf(outfile,"%s",buffer);
        }

        if (strcmp(buffer,DELIMITER) == 0)
        {
                msg_num_opt = line = attmail = 0;
        }

        line ++;
    }
}
```

```
/*

        Author:                 MICHAEL P. PONSCHKE, SR.
                                03/13/91

        Program:                SAFARI3.C
        Purpose:                TO EXTRACT MESSAGES FROM A TELEFIND PAGER
                                VIA IN RS-232 PORT ON A PC

        Compiler:               TURBO C++ 1.0
        Memory Model:           SMALL
*/

#include <dos.h>
#include <stdio.h>
#include <conio.h>
#include <string.h>
#include <stdlib.h>
#include "safari.h"

/*              CONSTANTS               */


#define DTR_HI                  0x01
#define DTR_LO                  0xfe
#define RTS_HI                  0x02
#define RTS_LO                  0xfd
#define DSR_HI                  0x20
#define RING_IN                 0x40
#define CD_HI                   0x80
#define FIVE_TICK               5
#define FIVE_SEC                96
#define TWELVE_SEC              220
#define LOG_FILE                "LOG"
#define INTRO_STRING            "Please standby, retrieving messages ..."

/*    FUNCTION PROTOTYPES       */

int beep(void);
void busyoff(void);
void busyon(void);
void disoff(void);
void dison(void);
int link(void);
void print_message(void);
int rxdata(void);
int strobe(void);
int strobe_data(void);
unsigned ticks(void);
int timeout(unsigned start, int delay);

/*   VARIABLE DECLARATIONS      */

char pager_buffer[511];
int com_base,control_reg,status_reg,log_flag;
FILE *log_file;

void main(int num_arg, char **args)
{
        unsigned start;
        int restart,x;

        com_base = 0x3f8;       /*    use com 1 unless command line denotes otherwise   */

        /*      get command line arguments      */
```

```
/*      all command line arguments begin with a single `-' and
        must be seperated by a single space between each other
        and the program name

        -1      Use COM port 1
        -2      Use COM port 2
        -F      Log all activity to a file named LOG            */

        if (num_arg > 1)
        {
                for (x=1; x<num_arg; x++)
                {
                        if (strcmp(args[x],"-1") == 0)
                                com_base = 0x3f8;
                        if (strcmp(args[x],"-2") == 0)
                                com_base = 0x2f8;
                        if (strcmp(args[x],"-F") == 0)
                                log_flag = 1;
                }
        }

        if (log_flag)
                if ((log_file = fopen(LOG_FILE,"at")) == NULL)
                        printf("Unable to open LOG\n");

        control_reg = com_base + 4;
        status_reg = com_base + 6;

        clrscr();

        if (link() == 0)        /*    is pager attached ?       */
                {
                printf("Please attach Message Receiver \n");
                exit(0);
                }

        busyon();               /*  start busy at logic high    */

        if (log_flag)
                fprintf(log_file,"Initiating process \n");
        printf("%s\n",INTRO_STRING);
        dison();        /* push display button  */
        sleep(2);
        do
        {
                start = ticks();
                restart = 0;
                do
                {
                        if (beep())
                        {
                                print_message();
                                restart = 1;
                                start -= TWELVE_SEC;
                                break;
                        }
                }
                /* hold display button for 12 seconds   */
                while(! timeout(start,TWELVE_SEC));
        }
        while(restart);

        disoff();       /* release the display button   */
        if (log_flag)
        {
                fprintf(log_file,"Process Complete \n");
```

```
            fclose(log_file);
        }

}

/*              pager beep              */
int beep(void)
{

/*      accesses the RI line via the Status Register
        which is activated when the pager beeps         */

        unsigned start;

        start = ticks();
        while ( ! timeout(start,FIVE_TICK))
        {
                if ((inportb(status_reg) & RING_IN) == 0 )
                        return(1);
        }
        return(0);
}

/*      busyon & busyoff toggle the DTR line via the
        Control Register to strobe in data from the pager                       */

void busyoff(void)
{
        outportb(control_reg,inportb(control_reg) | DTR_HI);
}

void busyon(void)
{
        outportb(control_reg,inportb(control_reg) & DTR_LO);
}

/*      dison & disoff toggle the RTS line via the Control Register
        to simulate the pressing of the display button on the pager             */


void dison(void)
{
        outportb(control_reg,inportb(control_reg) | RTS_HI);
}

void disoff(void)
{
        outportb(control_reg,inportb(control_reg) & RTS_LO);
}

int link(void)
{

/*      accesses the CD line via the Status Register
        which is logic high when pager is connected     */

        if ((inportb(status_reg) & CD_HI) == 0)
                return(0);
        return(1);
}

void print_message(void)
{
        FILE *file;
        unsigned start;
        int x,y=0,z=0,chr,bit;
```

```
busyoff();      /*      ready to accept pager data      */

/*              read until end code received            */
while (chr != 3)
{
        chr = 0;
        start = ticks();

        /*      wait for start bit      */

        do
        {
                bit = strobe();
                if (bit == 0)
                        break;
        }
        while (!timeout(start,FIVE_SEC));

        if (bit)
        {
                if (log_flag)
                        fprintf(log_file,"Transmission Error, recheck connection\n");
                disoff();
                exit(0);
        }

        /*              strobe out 8 bit data           */

        for (x=1; x<9; x++)
        {
                chr <<= 1;
                chr += bit = strobe_data();
        }

        /*              clear out stop bits             */
        for (x=1;x<3;x++)
        {
                strobe_data();
        }

        /*   extract start and end codes from message

             pager signon       02, 1B, C0, 33
             pager signoff      03                      */

        if ((y > 3) && (chr != 3))
        {
                /* pager characters 96 and 97 are converted to
                   0xFA and 0xFB to display on pager            */

                if (chr == 0xfa)        /*    convert to CR     */
                        chr = '\n';
                if (chr == 0xfb)        /*    convert to TAB    */
                        chr = 0x09;

                pager_buffer[z] = chr;
                z ++;
        }
        y ++;
}

pager_buffer[z] = '\0';                 /*    null terminate    */

busyon();   /*       finished receiving data            */
```

```
        if (log_flag)
                fprintf(log_file,"%s\n",pager_buffer);

        if ((file = fopen(ATT_EMAIL_FILE, "at")) == NULL)
                fprintf(log_file,"Unable to open TFMOBOX.TMP\n");
        else
        {
                fprintf(file,"%s\n",pager_buffer);
                fprintf(file,"%s",DELIMITER);
                fclose(file);
        }

        start = ticks();
        while(!timeout(start,FIVE_SEC))
        {
        /*      wait for erase beep      */
                if (beep()) break;
        }
        sleep(1);       /*      wait one more second    */
}

int rxdata(void)
{

/*      accesses the DSR line via the Status Register
        which returns the bits value                    */

        if (inportb(status_reg) & DSR_HI)
                return(0);
        return(1);
}

int strobe(void)
{
        int bit;

        busyon();
        delay(1);
        busyoff();
        delay(4);
        bit = rxdata();
        return(bit);
}

int strobe_data(void)
{
        int bit;

        busyon();
        delay(2);
        bit = rxdata();
        busyoff();
        delay(1);
        return(bit);
}

unsigned ticks(void)
{
        /*      returns timer ticks (approx. 18.2/sec)
                using only lower registers              */

        union REGS in,out;

        in.x.ax = 0x0;
        int86(0x1a,&in,&out);
        return(out.x.dx);
```

```
}

int timeout(unsigned start, int delay)
{
        /*      used for timing events of up to approx. 1 hour.
                used in conjunction w/ticks()                   */

        unsigned current;

        current = ticks();
        if (start <= current && (start + delay) < current)
                return(1);
        if (start > current && (start - 65535 + delay) < current)
                return(1);
        return(0);
}
```

```
      /* mark the end of the command line you built,so you can add ending
         delimiter */
      sys_command[i] = NULL;
      /* add the ending quote for the users message so shell wont
         interepert special characters */
      strcat(sys_command, "\'");
      /* execute command you built */
      system(sys_command);

      printf("sending message: %s\n", sys_command);

    }
    else {
      if(strlen(mesg) == 0 ) {
         return(0);
      }
      /* print error for invalid message length */
      printf("telemail error: invalid message length: %s\n", mesg);
      return(0);
    }

    return(i);
}

/*************************************************************************
*
*   function: getline(hold-buffer, input-file-pointer)
*   arguments: pointer to buffer where line read will be heald,
*              file pointer to input file
*   description: reads 1 line of text from the input line and stores the
*                line read into the buffer passed.
*   returns: -1 if EOF or number of characters read in
*
*************************************************************************/
getline(buff, fp)
char *buff;
FILE *fp;
{
   int ch, cnt;

   /* keep on reading characetrs from file so long as end of file not
      reached or char is the end of line */
   for(cnt = 0; ((ch = fgetc(fp)) != EOF) && ch != '\n'; cnt++) {
       /* MOD BY OT 11/29/90 convert tab to space */
       /* convert tabs to single space */
       if(ch == 9) {
          ch = ' ';
       }
       /* MOD BY OT 11/29/90 dont allow control char */
       /* only load in ascii characters */
       if(isprint(ch) != 0) {
          buff[cnt] =  ch;
       }
       else {
             /* turn control characters to spaces */
             buff[cnt] = ' ';
       }
   }
   /* mark the end of the buffer you built */
   buff[cnt] = '\0';
```

```
/*************************************************************************
*
*   function: send_mesg(message-pointer)
*   arguments: pointer to text message(capcode,text) to be sent
*   description: takes passed message text makes sure the first 8 positions
*                are numeric(capcode). it builds and executes the network
*                send command(netsend.sh) to sedn the message passed.
*   returns: 0 if not sent otherwise the number of characters sent out
*
*************************************************************************/
int send_mesg(mesg)
char *mesg;
{
   char sys_command[700];
   int i;
   int ch;
   char *mesg_ptr;

   /* left justify the message passed to remove leading spaces */
   striljust(mesg, 512);
   /* trim off trailing blank spaces from the message */
   strtrim(mesg);

   /* make sure you have a capcode at least */
   if(strlen(mesg) > 8) {

      /* start to build the command to be executed to send message retreieved
         from the mail box */
      strcpy(sys_command, "netsend.sh ");

      /* loop while still more characters in the message */
      for(mesg_ptr = mesg, i = 11; *mesg_ptr != NULL; i++, mesg_ptr++) {

          /* make sure the first 8 positions of the message are numeric */
          if((i < 19) && (*mesg_ptr < '0' || *mesg_ptr > '9')) {
              printf("telemail error: invalid capcode: %s\n", mesg);
              return 0;
          }

          /* is the user didsnt seperate capcode & message then insert a
              space into the command */
          if(i == 19 && *mesg_ptr != ' ') {
             sys_command[19] = ' ';
             i = 20;
          }

          /* enclose the users message with ' so shell wont interpet
             special characters */
          if(i == 20) {
             sys_command[20] = '\'';
             i = 21;
          }

         /* put the character from the message onto to the
            command to be executed"*/
         sys_command[i] = *mesg_ptr;

      }
```

```
   /* since your just starting clear the message area */
   memset(mesg, NULL, MAXMSGLEN);

   /* keep on geting lines from the file until you reach end of file */
   while(getline(buff, fp) != -1) {

      /* every mail message start with the word "From " */
      if(strncmp(buff, "From ", 5) == 0) {
         /* set flag telling you are currently going thru mail header
            so you dont add it to the message */
         in_header = 1;
         /* call routine to the last message if any exists */
         send_mesg(mesg);
         continue;
      }

      /* a mail header end with the following string */
      if(strncmp(buff, "Content-Length:", 15) == 0) {
         /* turn off flag so you know you are no longer in mail
            message header */
         in_header = 0;
         /* clear the old message since this is a new one */
         memset(mesg, NULL, MAXMSGLEN);
         continue;
      }

      /* if the line you are now reading in not part of the mail header
         add it to the message */
      if(in_header == 0) {
         strljust(buff, 512);
         strtrim(buff);
         /* make sure you dont add more than the message length */
         if( (strlen(buff) + strlen(mesg)) < MAXMSGLEN) {
            strcat(mesg, " ");
            strcat(mesg, buff);
         }
      }

   } /* end of read line while */

   /* send the last message in the file */
   send_mesg(mesg);

}
```

We claim:

1. A system for connecting a plurality of electronic mail systems each transmitting originated information originating from one of a plurality of originating processors to at least one of a plurality of destination processors comprising:

at least one interface switch, the at least one interface switch being coupled to each of the plurality of electronic mail systems for receiving the originated information originating from the one of the plurality of originating processors in one of the electronic mail systems for transmission to the at least one of the plurality destination processors in another of the electronic mail systems; and

a RF information transmission network, coupled to the at least one interface switch, for transmitting the originated information received from the one of the at least one interface switch by RF transmission to at least one RF receiver which transfers the originated information to the at least one of a plurality of destination processors within the another of the electronic mail systems; and wherein

each of the plurality of electronic mail systems transmits other information from its plurality of originating processors to its plurality of destination processors through a wireline without using the RF information transmission network.

2. A system in accordance with claim 1 wherein:

an interface address of the at least one interface switch to receive the originated information is added at the one of the plurality of originating processors originating the originated information or by the one of the electronic mail systems to the originated information; and

a destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is added to the originated information at the one of the plurality of originating processors originating the originated information or by the one of the plurality of electronic mail systems or the interface switch to receive the originated information.

3. A system in accordance with claim 1 wherein:

the originated information includes electronic mail system information used by the one of the electronic mail systems during transmission of the originated information through the one of the electronic mail systems; and

the at least one interface switch receiving the originated information removes the electronic mail system information and adds to the originated information, after removal of the electronic mail system information, RF transmission network information used by the RF information transmission network during transmission of the originated information to the at least one RF receiver.

4. A system in accordance with claim 3 wherein:

the interface switch receiving the originated information further adds to the originated information after removal of the electronic mail system information encoded information used by the at least one of the plurality of destination processors in the another of the electronic mail systems to receive the originated information and the encoded information is decoded either by the at least one RF receiver or the at least one of the plurality of destination processors in the another of the electronic mail systems to receive the originated information and is processed by the at least one of the plurality of destination processors in the another of the electronic mail systems with a format of the another of the electronic mail systems.

5. A system in accordance with claim 2 wherein:

the originated information includes electronic mail system information used by the one of the electronic mail systems containing the one of the plurality of originating processors used during transmission of the originated information through the one of the electronic mail systems; and

the at least one interface switch removes the electronic mail system information and adds to the originated information, after removal of the electronic mail system information, RF transmission network information used by the RF information transmission network during transmission of the originated information to the at least one RF receiver.

6. A system in accordance with claim 5 wherein:

the interface switch receiving the originated information further adds to the originated information after removal of the electronic mail system information encoded information used by the at least one of the plurality of destination processors in the another of the electronic mail systems to receive the originated information and the encoded information is decoded either by the at least one RF receiver or the at least one of the plurality of destination processors in the another of the electronic mail systems to receive the originated information and is processed by the at least one of the plurality of destination processors in the another of the electronic mail systems with a format of the another of the electronic mail systems.

7. A system in accordance with claim 3 wherein:

the originated information includes electronic mail system information used by the one of the electronic mail systems containing the one of the plurality of originating processors used during transmission of the originated information through the one of the electronic mail systems; and

the at least one interface switch receiving the removes the electronic mail system information and adds to the originated information, after removal of the electronic mail system information, RF transmission network information used by the RF information transmission network during transmission of the originated information to the at least one RF receiver.

8. A system in accordance with claim 7 wherein:

the interface switch receiving the originated information further adds to the originated information after removal of the electronic mail system information encoded information used by the at least one of the plurality of destination processors in the another of the electronic mail systems to receive the originated information and the encoded information is decoded either by the at least one RF receiver or the at least one of the plurality of destination processors in the another of the electronic mail systems to receive the originated information and is processed by the at least one of the plurality of destination processors with a format of the another of the electronic mail systems.

9. A system in accordance with claim 2 wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch receiving the originated information, stores the originated information, assembles the originated information with other originated information received from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

10. A system in accordance with claim **9** wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch transmits the packet and disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and wherein

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any added destination transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

11. A system in accordance with claim **3** wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch receiving the originated information, stores the originated information, assembles the originated information with other originated information received from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

12. A system in accordance with claim **11** wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch transmits the packet and disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and wherein

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any added destination transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

13. A system in accordance with claim **4** wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch receiving the originated information, stores the originated information, assembles the originated information with other originated information received from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

14. A system in accordance with claim **13** wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch transmits the packet and disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and wherein

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any added destination transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

15. A system in accordance with claim **5** wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch receiving the originated information, stores the originated information, assembles the originated information with other originated information received from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information trans-

mission network.

16. A system in accordance with claim 15 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch transmits the packet and disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and wherein

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any added destination transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

17. A system in accordance with claim 6 wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch receiving the originated information, stores the originated information, assembles the originated information with other originated information received from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

18. A system in accordance with claim 17 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch transmits the packet and disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and wherein

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any added destination transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

19. A system in accordance with claim 7 wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch receiving the originated information, stores the originated information, assembles the originated information with other originated information received from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

20. A system in accordance with claim 19 wherein the RF information transmission network comprises:

a RF information transmission network switch, the RF information transmission network switch receiving the packet from the interface switch transmits the packet and disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and wherein

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any added destination transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

21. A system in accordance with claim 2 wherein:

the interface address is added by the one of the plurality of the originating processors originating the originated information; and

the destination processor address is added by the one of the plurality of the originating processors originating the originated information or a gateway switch of the one of the electronic mail systems.

22. A method for connecting a plurality of electronic mail systems each transmitting originated information originating from one of a plurality of originating processors to at least one of a plurality of destination processors comprising:

transmitting the originated information originating from one of the plurality of originating processors in one of the electronic mail systems to an interface switch;

transmitting the originated information from the interface switch to a RF information transmission network; and

transmitting the originated information with the RF information transmission network to at least one RF receiver which transfers the originated information to the at

least one of a plurality of destination processors within another of the electronic mail systems; and wherein

each of the plurality of electronic mail systems transmits other information from its plurality of originating processors to its plurality of destination processors through a wireline without using the RF information transmission network.

23. A method in accordance with claim 22 wherein:

an interface address of the interface switch is added at the one of the plurality of originating processors originating the originated information or by the one of the electronic mail systems to the originated information; and

a destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is added to the originated information at the one of the plurality of originating processors originating the originated information or by the one of the electronic mail systems or the interface switch to receive the originated information.

24. A method in accordance with claim 22 wherein:

the originated information includes electronic mail system information used by the one of the electronic systems during transmission of the originated information through the one of the electronic mail systems; and

the interface switch removes the electronic mail system information and adds to the originated information, after removal of the electronic mail system information, RF information transmission network information used by the RF information transmission network during transmission of the originated information to the at least one RF receiver.

25. A method in accordance with claim 24 wherein:

the interface switch adds encoded information used by the at least one of the plurality of destination processors in the another of the electronic mail systems to the originated information and the encoded information is decoded either by the at least one RF receiver or the at least one of the plurality of destination processors in the another of the electronic mail systems and is processed by the at least one of the plurality of destination processors in the another of the electronic mail systems.

26. A method in accordance with claim 23 wherein:

the originated information includes electronic mail system information used by the one of the electronic systems during transmission of the originated information through the one of the electronic mail systems; and

the interface switch removes the electronic mail system information and adds to the originated information, after removal of the electronic mail system information, RF information transmission network information used by the RF information transmission network during transmission of the originated information to the at least one RF receiver.

27. A method in accordance with claim 26 wherein:

the interface switch adds encoded information used by the at least one of the plurality of destination processors in the another of the electronic mail systems to the originated information and the encoded information is decoded either by the at least one RF receiver or the at least one of the plurality of destination processors in the another of the electronic mail systems and is processed by the at least one of the plurality of destination processors in the another of the electronic mail systems.

28. A method in accordance with claim 23 wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch stores the originated information, assembles the originated information with other originated information from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

29. A method in accordance with claim 28 comprising:

receiving the packet from the interface switch with a RF information transmission network switch which disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any destination of the at least one RF receiver transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

30. A method in accordance with claim 24 wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch stores the originated information, assembles the originated information with other originated information from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

31. A method in accordance with claim 30 comprising:

receiving the packet from the interface switch with a RF information transmission network switch which disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information

transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any destination of the at least one RF receiver transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

32. A method in accordance with claim 25 wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch stores the originated information, assembles the originated information with other originated information from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

33. A method in accordance with claim 32 comprising:

receiving the packet from the interface switch with a RF information transmission network switch which disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any destination of the at least one RF receiver transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

34. A method in accordance with claim 26 wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch stores the originated information, assembles the originated information with other originated information from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

35. A method in accordance with claim 34 comprising:

receiving the packet from the interface switch with a RF information transmission network switch which disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any destination of the at least one RF receiver transmits the originated information and identification number to any destination of the at least one RF receiver for RF broadcast to the at least one RF receiver.

36. A method in accordance with claim 27 wherein:

the destination processor address of the at least one of the plurality of destination processors to receive the originated information in the another of the electronic mail systems is an identification number of the at least one RF receiver in the RF information transmission network; and

the interface switch stores the originated information, assembles the originated information with other originated information from a plurality of the originating processors in the one of the electronic mail systems into a packet and transmits the packet to the RF information transmission network.

37. A method in accordance with claim 36 comprising:

receiving the packet from the interface switch with a RF information transmission network switch which disassembles the packet into information including the originated information from the plurality of originating processors in the one of the electronic mail systems; and

the RF information transmission network transmits the disassembled information including the identification number of the at least one RF receiver transferring the originated information to the at least one of the plurality of destination processors to another RF information transmission network switch in the RF information transmission network storing a file containing the identification number and any destination of the at least one RF receiver in the RF information transmission network to which the originated information and identification number is to be transmitted by the RF information transmission network and adds any destination of the at least one RF receiver stored in the file containing the identification number to the originated information and the RF information transmission network in response to any destination of the at least one RF receiver transmits the originated information and identification number to any destination of the at least one

RF receiver for RF broadcast to the at least one RF receiver.

38. A method in accordance with claim 23 wherein:

the interface address is added by the one of the plurality of the originating processors originating the originated information; and

the destination processor address is added by the one of the plurality of the originating processors originating the originated information or a gateway switch of the one of the electronic mail systems.

39. A method in accordance with claim 22 wherein:

the at least one RF receiver transfers the originated information from storage to the at least one destination processor in the another of the electric mail systems at a time subsequent to reception of the originated information by the at least one receiver.

40. A method in accordance with claim 39 wherein:

the at least one RF receiver is portable.

41. A method in accordance with claim 39 wherein:

the at least one RF receiver and the at least one destination processor in the another of the electronic mail systems are portable.

42. A method in accordance with claim 39 wherein:

the transfer of the originated information occurs after the at least one RF receiver is connected to the at least one destination processor in the another of the electronic mail systems.

43. A method in accordance with claim 40 wherein:

the transfer of the originated information occurs after the at least one RF receiver is connected to the at least one destination processor in the another of the electronic mail systems.

44. A method in accordance with claim 41 wherein:

the transfer of the originated information occurs after the at least one RF receiver is connected to the at least one destination processor in the another of the electronic mail systems.

45. A method in accordance with claim 39 wherein:

the transfer occurs under control of a program stored by the at least one destination processor of the another of the electronic mail systems and makes the originated information accessible to application programs stored within the at least one destination processor of the another of the electronic mail systems.

46. A method in accordance with claim 42 wherein:

the transfer occurs under control of a program stored by the at least one destination processor of the another of the electronic mail systems and makes the originated information accessible to application programs stored within the at least one destination processor of the another of the electronic mail systems.

47. A method in accordance with claim 22 wherein:

the transmission of the originated information between the one of the originating processors and the interface switch is through a host computer, a telephone network and a gateway switch.

48. A method in accordance with claim 22 wherein:

the transmission of the originated information between the one of the originating processors and the interface switch is through a private automatic branch exchange, a telephone network and a gateway switch.

49. A method in accordance with claim 22 wherein:

the transmission of the originated information between the one of the originating processors and the interface switch is through a local area network, a telephone network and a gateway switch.

50. A method in accordance with claim 22 wherein:

the transmission of the originated information between the one of the originating processors and the interface switch is through a modem, a telephone network and a gateway switch.

51. A system in accordance with claim 1 wherein:

the one of the electronic mail systems comprises a private automatic branch exchange.

52. A system in accordance with claim 1 wherein:

the one of the electronic mail systems comprises a local area network.

53. A system in accordance with claim 1 wherein:

the one of the electronic mail systems comprises at least one gateway switch.

54. A system in accordance with claim 53 wherein:

the one electronic mail system further comprises a telephone network.

55. A system in accordance with claim 54 wherein:

the telephone network is a public switch telephone network.

56. A system in accordance with claim 1 wherein:

the one of the electronic mail systems comprises a host central processing unit.

57. A system in accordance with claim 1 wherein:

the another of the electronic mail systems comprises a private automatic branch exchange.

58. A system in accordance with claim 1 wherein:

the another of the electronic mail systems comprises a local area network.

59. A system in accordance with claim 1 wherein:

the another of the electronic mail systems comprises at least one gateway switch.

60. A system in accordance with claim 1 wherein:

the another of the electronic mail systems further comprises a telephone network.

61. A system in accordance with claim 60 wherein:

the telephone network is a public switch telephone network.

62. A system in accordance with claim 1 wherein:

the another of the electronic mail systems comprises a host processing unit.

* * * * *